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ABSTRACT

Teachers who are specialists in motoric skill-building need to think about ways in which they can help the whole child develop. This paper discusses: (1) fine and gross motor development in infancy; (2) baby cuddling for optimal motoric development; (3) cross-cultural studies and infant body holding; (4) floor freedom for babies; (5) body language of caregivers in child care; (6) early rhythmicity and teacher interactions; (7) body sensuality and motoric relaxation; (8) aggression; (9) tense days in preschools; and (10) group games as a method for promoting prosocial development. It is concluded that caregivers who use their bodies to promote security, and who plan carefully for movement activities with cognitive and prosocial goals, will have children who thrive in a truly developmental setting. (RH)

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Baby Moves: Relation to Learning

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Motor development is one focus in programs to enhance children's learning and experiential pleasures. But motoric development needs to be considered in relation to the whole child. We need to see how social, motor, and problem solving development intersect and support growth from infancy through the preschool years.

A focus only on preschoolers neglects the role of the earliest learnings. In infancy, motoric competencies are often the means by which developmental milestones and rates of growth in a child`s cognitive competencies are measured. For most infancy test items, motoric and cognitive growth are inseparable in the earliest years. Sample items from the Cattell Infant test are: baby follows a toy in a smooth oculomotor, circular motion, bangs two blocks together; hits spoon back and forth inside a cup; stacks cubes; copies a circle; pulls a string to capture a red ring; reaches around a glass barrier to retrieve a bead necklace behind the glass; zooms a toy car back and forth across a table top.

Fine and Gross Motor Development in Infancy

How do motoric competencies that permit assessment of intellective and social skills grow? What are the early sequences of fine and gross motor skills? Infants are wiggly

creatures. They respond to stimulation, such as a tickle on the foot, by moving both feet and often arms and mouth as well. As a baby grows, she twists, wriggles, molds to the contours of a caregiver's body, no matter what the size or shape. By four or five months, the hand system begins its vigorous and refined journey toward specialization. From batting at overhead mobiles, swiping and corralling toys with a full hand-raking motion, the hands progress toward scissors grasp and neater and more precise pincer grasps with just forefinger and thumb. Finally by one year, a baby can pinch a crumb off a bib (filled with first-birthday cake crumbs) with finesse. The pointer finger is vigorous and demanding; showing and pointing are in full sway by about 10 months. The baby can make hands work at the midline to play pat-a-cake and bang two cubes together. Wrist control comes into play after many spills and dribbles so that by one and a half years, the baby can control a cup fairly well for drinking.

By 11 to 15 months, the motoric system that controls lower trunk and legs begins to mature more. Babies who have been rocking back and forth with tummies lifted high off the floor since about 6 months now grow to locomote. Often they crawl backwards while trying to reach for an alluring toy placed in front of them. From crawling on bellies or scooting, they progress to creeping with tummies high off the floor. Somewhere after the first year, having pulled themselves erect, babies cruise about holding on, and, finally, launch themselves off into space, giddy with the joy of verticality and with the pride of

their courageous, wobbly steps, reminding one of a drunken sailor. Tumbles and spills count for little. Over and over the baby practices walking until finally the body can not only walk fairly well, but even run, turn corners without tumbling, and bend down to pick up a toy to carry on the way without a sudden involuntary sit-down. The wide apart legs and arms out to steady the body characterize the new adventurer in space.

All of these motoric milestones over the infancy period of the first three years of life are accompaniments of cognitive growth. They are preludes to spatial explorations and understanding. They are facilitators of grasping, waving, banging, reaching, inverting, righting, sorting, stacking, nesting, plucking in order to learn better about object permanence, causal relationships, gestural imitations, means-end-separations, and may other Piagetian sensorimotor and early preoperational milestones.

The Role of Baby Cuddling for Optimal Motoric Beginnings

The role of the caregiver in infant motoric advances is fundamental to the beginning of motor alertness. Body holding and tender positioning by the caregiver accommodate baby needs. Thus begin the patterns of easier body rhythms, when a baby can trust that hunger and wetness and discomforts are truly recognized and promptly attended to by the caregiver. Tensions relax as the baby molds to the trusted adult's body. Such motoric attunements presage less tension in body gestures and movements later on. The baby given plenty of cuddling and lap

holding time feels more emotionally secure. This child can respond motorically in a more relaxed, graceful body fashion. Children who feel uncertain about maternal body loving may act more "maturely" in terms of being able to play on their own, or explore away from the caregiver. But sometimes, children without body loving will exhibit a diffuse restless motoric quality. They wander around a nursery and cannot settle into an activity for persistent play. They may act tense and hyperactive, stiffening their bodies defiantly if a teacher reminds them of reasonable rules. They may whirl with clenched fists to defend themselves against perceived threats, if another youngster simply brushes past on the way toward an attractive toy. Well-cuddled babies and toddlers may be more motorically at ease in body movements and smoother in their coordinations.

Because they are shoved off breasts and laps too early, some babies may even seem "naughtier". Their increased motoric impulsivity and muscular tension lead them to clumsier behaviors that result in knocking over other children's block constructions, or breaking the family's precious objects more often.

Cross Cultural Studies and Infant Body Holding

In many cultures, mother's responses to the infant at birth help a baby increase muscle tone and assured coordination. Dr. Brazelton(1977) in pediatric work in Lusaka, East Africa noted that a tribal mother with a depleted uterus may give birth to a baby with yellow peeling skin. Baby is floppy and hypotonic.

Yet within days, the mother, who nurses frequently, wraps her baby firmly in her dashiki and winds the cloth securely to her body. Then she sets off to walk back to her village. Visiting nearly two weeks later, Brazelton found that these babies had made real motoric advances:

> By ten days these neonates were ahead of our controls in alerting to voice and handling, in social interest and quieting when handled, in regulating motor adjustments, in maintaining alert states, and were demonstrating an exciting quality of motor responses which we had labelled directed (p.49).

Infants are carried on the mother's or a caregiver's body in many cultures. Mexican families carry baby in a rebozo. Japanese grandmothers market with infants strapped on their backs. In Llasa, the capital of Tibet, babies are snuggled securely by cloths wound onto their parent's back. In China, a parent will often make a cradle of hands behind the back and carry a youngster in piggy-back style on the back.

Thus, across the world, many peoples give the gift of "dominion" over the adult body to the infant and toddler (Honig, 1983). The infant is given the priceless gift of touch, warmth, shifting postures, and security.

In China, I have observed that while older brothers and sisters on a street in Wu Xi were trying to create structures out of rubble in a lot, their toddler siblings were busy cheerfully trying to jump on the older children's backs- the back was a place of pleasure and comfort- and even play. Yet in the United States we often bring up infants in cribs, swings, and plastic

seats. We need to get back to offering more body time to babies.

Floor Freedom for Babies

Ainsworth (1982) has pioneered studies of the development of attachment patterns of infants with their caregivers. Aside from tuned-in responsive caregiving, body availability and generous prompt response to distress, and tempos in feeding that match infant needs, babies need motoric practicing space.

Floor freedom gives an infant opportunity to practice pushing up off the floor, reaching for toys, venturing into brave explorations, and feeling the edges of her or his body. Kaplan (1978) calls this "putting a rind on the body". Mothers of secure infants provide floor freedom. Ainsworth (1967) observed Ganda infants in Uganda. They crept freely over the body of the mother. Upon reunion, they lifted their arms and crept toward mother in order to be lifted into arms. They vocalized and smiled greetings at a returning mother, and were able to respond more positively to strangers from the security of mother's arms.

In researching the beginnings of secure and insecure emotional attachments, Ainsworth(1982) has noted that mothers of avoidantly attached babies (who may be very demanding of mother at home, but who avoid greeting her or asking for a reassuring hug in a reunion situation) dislike body contact or affectionate interactions. Resistent-ambivalent babies yearn for body contact in a reunion situation, but push away or strike at the parent who does offer a pick up and hug. These mothers are affectionate. However, in general, they are insensitive to body signals of

their babies. They may pick up and play with an infant at their convenience. They behave intrusively and insensitively with stimulation just when a baby is busy and absorbed playing with toys or batting at a crib mobile. They are inconsistent in discipline and non-contingent in responding to the baby's signals of mood, need or preference.

Researches by Sroufe(1985) and colleagues have found that insecure infants have later histories of fighting with peers, bullying or being bullied. When maternal inappropriateness reaches the level of child abuse, then researches show that motorically inappropriate aggressive behaviors typify responses of toddlers both to peers in a play situation and to adults (Main & George, 1985). Thus, aggressive motoric actions in toddlerhood and in the preschool and school years have been experimentally tied to maternal care that is indifferent, insensitive, and even violent with the child. Child motoric aggressions, if they are not redirected through therapeutic endeavors of caregivers and teachers, can lead to later violence against persons, in assaults.

When early intervention programs for young children include responsive loving caregiving, intellectual stimulation and motoric skill building in prosocial and positive peer group interactions, then the long term motoric violence that characterizes delinquents may be averted.

In a longitudinal program of high quality day care offered to infants from six months to five years, Lally, Mangione & Honig

(1988) report that infants from low income, teenage high school drop out families, but who attended a high-quality infant/ preschool program, grew up to be teenagers who exhibited much less delinquency than control youngsters. Of 65 control adolescents, 4 had been before the courts as juvenile delinquents, and 3 of the 4 were considered undercontrolled. Of the 54 control adolescents, who had not been in a high quality program in their infancy and early years, there were 12 with assaultive records, including armed robbery, rape and burglary, and several offenses on their records. Thus, use of motoric skills for violence may well be prevented by early enrichment programs for babies and their families.

Body Language of Caregivers in Child Care

Aspects of child caregiving situations a teacher provides will influence the motoric grace, vigor and enjoyment young children develop. Caregivers need to ask themselves how "armored" they are. Young children in group care need access to caregiver hugs and laps. Immaculate grooming that gives "off limits" signs to young children can make them feel tense and hungry for body contacts. They may be hit for infractions at home. Negative body contacts are the ones they know and are comfortable with. Some children even try to goad teachers into shaking them or handling them firmly in negative discipline situations because the children miss skin contact and they only know how to "re-create" in the nursery inappropriate body and motoric interactions from their home lives (Wittmer & Honig,

1988).

Caregivers need not worry about heavy dieting. The more body you have, the more kids can get comfortable on you, or lean against you. Kids will like too much of you rather than too little!

Some adults are worried that toddlers who are held too much will tend to be overprotected and unadventurous. That is not true. The great motoric strivings of toddlers lead them to practice walking, running, turning around, carrying toys and locomoting. Their inner timetables will impel them to set off on their own when they are ready. Inner timetables and deathless curiosity lead them on. Toddlers need to be sure that caregiver bodies are available as "refueling stations". Toddlers need to feel in control of their growing motoric maturity and new steps toward independence both literally and symbolically. Practicing these new motor skills is a great joy and determination of toddlers. No one needs to "force" a baby to learn to walk. Babies will get up and practice motoric skills on their own. Lure them; don't force them. Provide wonderful safe environments with sturdy equipment and toys.

Early Rhythmicity and Teacher Interactions

Babies have rhythm. They love to bounce their butts to music. They even coo and kick their legs in response to the vocal and verbal rhythms of parents whose voices are caressingly and admiringly directed to them.

A good game for eight or nine month olds is to put them in

an infant seat and bang gently on a drum. Any poetic or nursery rhyme rhythms will do. Try "Hickory-dickory dock, the mouse ran up the clock," or "Mary had a little lamb." The strong rhythms of nursery rhymes and folk songs will lead babies to bounce in rhythm with songs and poetry.

Dancing with babies in adult arms also helps them learn the pleasure of music and rhythms. Put on waltzes and slow music or slow minor-key melodies on a dark and gloomy winter afternoon and dance around with babies in arms.

Toddlers, of course, love if you put on easy-to-sing slow ice-skating music (not loud or nervous rock rhythms) and give each toddler a piece of nylon gauze to wave and to twirl as they dance around with their peers.

Body Sensuality and Motoric Relaxation

Young children who are tense have more trouble with graceful coordination of their muscles. Tension and stress are pervasive in the lives of some children even in secure loving families. The demands and time constraints of dual career families can cause them to rush on the way to child care and rush when the child gets home. Allowing children sensual expressions give them opportunities to relax tense muscles. Children may need to suck a thumb, stroke a blanket, or masturbate gently under blankets at nap time. Teacher disapproval of children's attempts to provide sensual comforts for their tensions may increase their bodily tensions. Children need freedom to feel all of their feelings and to express their body feelings positively through dramatic

play games, large muscle games, such as chasing peers or marching around with other kids.

Aggression

Certain outlets for motoric tension are unacceptable in the child care setting. How shall teachers handle children's kicking, biting or hitting? Aggression cannot be accepted. Teachers need to communicate firmly and clearly that hurting others is not allowed. Yet toddlers who need to bite can bite on a teether. A teether toy is for biting. People aren't. A child can spit in a toilet. But not at a person. Pegboards are for pounding. People aren't. When the adult model is firm and clear, then motoric aggressions can be channelled appropriately. Body movement games and opportunities for muscular discharge are necessary for young children daily. Think of the screaming and running at recess times in elementary school play yards. Kids need motoric outlets as much as they need to develop specific skills in ball games and group games.

Tense Days in Preschools

Aside from organized group games and motor activities for young children, teachers need to take time on days when grumpiness runs high or gloomy weather outdoors keeps children confined inside, to carry out stretches and bends and rolls and tumbles and twists and curls and deep breathing exercises. Even massaging tots' backs can help. For infants, daily body massages as described in Leboyer's beautiful book "Loving Hands" can expand the beauty and full relaxation of limbs that infants feel

as they are gently massaged.

Older toddlers and preschoolers love to jump. Safe places need to be provided to crawl, slither, run, climb, and jump. Be sure that padded coverings are placed under geodesic domes so that if a brave climbing toddler does slip, the fall will be well cushioned.

Group Games as a Way to Promote Prosocial Development

Americans are a competitive people. Motoric skill building in the early years can enhance or hurt young children's self esteem. Teachers need to beware of using motor games to compare children. Each child should enjoy an activity for its own sake and for the group feeling of moving their bodies in the company of friends. Counting how long one child can hold on to a bar with his legs upside down, compared to another child, who has weaker muscles and drops quickly to the mat below, will cause jealousies and hurt feelings. Motoric strength and skill building must be subservient to nursery goals of building enjoyable group and personal experiences, building grace and self-confidence.

Caregivers need to brainstorm how to turn certain group games into opportunities for social cooperation - for learning sharing, cooperating, and concern for others rather than competition to feel superior to another child.

One good example is to create variants on familiar games. The game of "musical chairs" can be played so that each time the music stops and one chair is taken away, the child who is not so

quick to scramble for one of the remaining chairs can find a lap of a peer to sit on. Thus, at the end of the musical chairs game, no children are excluded, and everyone is either sitting on a chair or on a playmate's lap! Then, all the children have a place to be in that game. And yet they have to be skillful enough to scurry around and look for a place to be, but the game isn't excluding those who are the motorically least able. When teachers and parents compare kids unfavorably, that really kills the spirit. You can hate your brother or sister forever if mother or father thought your sibling was the smarter or the stronger or more able person.

The next thing a prosocial advocate promotes is bravery, courage, and ego strength through developmental practices based on Piagetian equilibration which I call "matchmaking and dancing the developmental ladder" (Honig, 1982). Promote bravery by setting paths for the child that are just a little bit hard, a little bit novel, a little bit different, a little bit new. Lure children. Seduction is wonderful for young children although it will get grown ups into a lot of trouble. Children who feel your positive regard will try harder to catch or throw a ball accurately. They try because they know they will probably be able to succeed. You are not demanding "performance" beyond their capacities. We are not here to coddle kids or to have fearful children. Start with easy games and children themselves will gradually choose to move toward greater challenges.

Why are prosocial skills so important? Living in peaceful

and supportive ways with each other is difficult for young children (and some grown ups!) to learn. Preschool motoric curricula can really help. Sports equipment that takes several children to work together can give a boost to cooperative sports learning. Help children to experience the pleasure of playing together ---- as when they all bat at balloons that you have blown up and set in motion and the rule is to keep the balloons up in the air as long as the children can.

Dr. Ronald Haskins (1985) has observed low income children who graduated from a cognitively-based high-quality program which they had attended full time from infancy to school age. Graduates of the Abecedarian project were observed in early elementary school. They kicked, hit, threatened and acted aggressively fifteen times as often as low income control children on the playground, in classrooms, corridors, and the lunchroom.

Of course, as soon as the project director implemented a prosocial program "My friends and me" from American Guidance Service, then the next wave of graduates did not show significantly more aggression toward peers in elementary school compared with their controls.

Prosocial motoric activities can be promoted with very young children. Toddlers can each hold two ends of a towel or blanket and try to keep a large ball bouncing on the blanket by moving their arms in coordinated gestures.

Teachers need to use more than motoric activities to promote

the skills of sharing, caring and helping. Read stories about kind friends to provide daily doses of bibliotherapy. Also use the television program, Mr. Roger's Neighborhood, which has been shown to increase children's tolerance for turn taking and for patient waiting during peer playground activities after a month of daily viewing (Friedrich & Stein, 1973).

Conclusions

Teachers who are specialists in motoric skill building need to think about how their speciality can help the whole child develop better. They need to think developmentally -from back rubs and massages for tiny tots to cooperative games for older children. Competition should not be the main goal. Increasing children's self esteem, gracefulness, and courage-to-try are important goals of movement education for young children. Problem solving skills should also be a goal of movement education. How can we coordinate a group of young children so that they are able to play London Bridges together without the teacher hovering over them to keep the game going at every moment? How can caregivers encourage the tot on a balance beam who is delighted with her progress across the narrow board without stumbling, while at the same time the teacher is willing to hold hands and encourage the more uncertain tot who still needs physical support while crossing the board and may even insist on scooting on her bottom to get all the way across!

Plan safe play spaces, cooperative activities, and give attention to different children's different skills, and different

needs for encouragement. Also important is the use of the teacher as beacon of safety and support on a playground. The teacher's presence is a sign that helps some children to remember not to ride a trike wildly into another child; a beacon of security that children know that they can run to for a big hug if their efforts to climb a rope ladder or to build a tall tower of blocks doesn't work out well. Teacher's loving hug can recharge a child's energy to persist at difficult tasks and activities.

Caregivers who use their bodies to promote security and who plan carefully for movement activities with cognitive and prosocial goals will have children who thrive and grow well in a truly developmental setting.

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